

CHILDHOOD ASTHMA

Many factors are reportedly associated with the development of asthma or the exacerbation of pre-existing asthma in children. Therefore, it is often hard to determine the underlying cause of a specific case of asthma in a child.

At least two pediatric textbooks recognize the potential importance of psychological factors in childhood asthma. The Nelson Textbook of Pediatrics states that "asthma is influenced to a considerable extent by emotional factors, and emotional incidents are important precipitants of symptoms in many children and adults." The National Medical Series for Independent Study: Pediatrics textbook states that "emotions play a major role in asthma" and that emotions "can trigger attacks; also symptoms are frequently exacerbated by laughing or crying."

House dust, house dust mites, and grass pollens reportedly produce the highest incidence of positive skin reactivity tests in children with bronchial asthma.

Authors of a recent study on asthma in inner city children concluded that "our results support the findings of previous studies indicating a correlation between more than threshold levels of dust mite and cockroach allergens at home and asthma in children who are sensitized to one or both of those allergens" and that "data from outside the United States show that a reduction in the symptoms of asthma occurred when dust mite allergen levels were significantly lowered."

Regarding ETS, the authors, in a reply to a Letter to the Editor regarding their study, wrote "our data do not support a major role of ETS in causing asthma in children more than 5 years of age, and we are not convinced by the published data from other groups that active or passive smoking is an important risk factor for acute exacerbations of asthma in this group."

The epidemiologic studies on parental smoking and childhood asthma are inconsistent in several aspects, including data collection methods, the definition of asthma, and the method of estimating exposure to ETS.

While some studies have measured cotinine levels in the bodily fluids of children to estimate exposure to parental smoking, there are problems with the use of cotinine that preclude any definitive conclusions from these data. For example, it has been reported that individuals metabolize nicotine in different ways at different times and that elimination rates for cotinine vary among individuals. In addition, recent research indicates that diet may contribute to levels of nicotine and cotinine

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found in the body, thereby interfering with reported exposure levels from nicotine in ambient air. Scientists have also noted that different methods of analysis may influence final recorded levels of cotinine. Finally, it has been observed that because nicotine is largely present in the gas-phase of ETS, measurement levels of its metabolite, cotinine, do not reflect exposures to other constituents present, for example, in the particulate phase of ETS.

In a study of New Zealand children, Mitchell et al. reported that the following factors appeared to be precipitating factors for asthma attacks: 1) weather (70%); 2) infection (61%); 3) stress or excitement (25%); 4) dust (24%); 5) pollen (17%); 6) food (13%); 7) running out of medicines (11%); 8) animals (10%); and 9) exercise (4%). A "miscellaneous agents" category including ETS exposure, noncompliance, etc., was reported to be associated with the precipitation of asthma attacks in only four percent of patients.

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